

Listing of Claims

1. (Canceled)

2. (Currently Amended) A method for controlling an operation of a compressor of a refrigerator, the method comprising:

varying a compression capacity of a compressor installed in a refrigerator by controlling a rotation direction of the compressor according to a load condition of the refrigerator, wherein the compression capacity of the compressor increases when the compressor is rotated in a first rotation direction with respect to a rotational axis of the compressor and decreases when the compressor is rotated in a second rotation direction that is opposite to the first rotation direction, and

wherein the controlling the rotation direction of the compressor varying the compression capacity comprises:

detecting a current rotation direction of the compressor;

setting an operation range of a temperature sensor that senses a temperature inside the refrigerator according to the detected current rotation direction of the compressor, the operation range of the temperature sensor set to a first temperature range of the refrigerator when the current rotation direction of the compressor is detected to be in the first rotation direction, and the operation range of the temperature sensor set to a second temperature range of the refrigerator different from the first temperature range when the current

rotation direction of the compressor is detected to be in the second rotation direction; and
sensing the temperature inside the refrigerator according to the set operation range;

controlling the cooling capacity of the compressor based on whether the
temperature inside the refrigerator is detected to be in the first temperature range or the second
temperature range, and

wherein varying the compression capacity further comprises:

performing a defrosting operation when a temperature inside the refrigerator and
a pre-set defrosting temperature are identical;

when the defrosting operation is terminated, rotating the compressor in the first
rotation direction, stopping the compressor, and rotating the compressor in the second rotation
direction at pre-set time periods;

when an operation mode of the refrigerator is selected by a user, selecting the
rotation direction of the compressor according to an amount of cooling air supply
corresponding to the selected operation mode, and controlling a rotation speed of the
compressor in the selected rotation direction by varying an operation frequency of the
compressor based on a temperature inside the refrigerator;

when the operation mode of the refrigerator selected by the user is a power saving
operation mode, rotating the compressor in the second rotation direction, and when the
temperature inside the refrigerator is higher than a first pre-set temperature, rotating the
compressor in the first rotation direction; and

when the operation mode of the refrigerator selected by the user is a standard operation mode, rotating the compressor in the first rotation direction, and when the temperature inside the refrigerator reaches a second pre-set temperature, rotating the compressor in the second rotation direction.

3-4 (Canceled)

5. (Previously Presented) The method of claim 2, further comprising:

when the compressor is rotated in the first rotation direction according to the operation mode of the refrigerator, detecting a current applied to the compressor, and if the detected current is greater than a pre-set reference current, rotating the compressor continuously in the first rotation direction, and if the detected current is smaller than the reference current, turning off the compressor; and

when the compressor is rotated in the second rotation direction according to the operation mode of the refrigerator, detecting a current applied to the compressor, and if the detected current is smaller than the pre-set reference current, rotating the compressor continuously in the second rotation direction, and if the detected current is greater than the pre-set reference current value, turning off the compressor.

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6. (Currently Amended) The method of claim 2, further comprising:

~~sensing the rotation direction of the compressor; and~~

if the rotation direction of the compressor needs to be changed according to a change of a temperature of the refrigerator, stopping the operation of the compressor for a predetermined time period and then changing the rotation direction of the compressor.

7-8 (Canceled)

9. (Currently Amended) The method of claim 2, wherein ~~when the compressor is rotated in the first rotation direction~~, the operation range of the temperature sensor is set to -0.5°C~+0.5°C when the current rotation range is in the first rotation direction.

10. (Currently Amended) The method of claim 2 [[2]], wherein ~~when the compressor is rotated in the second rotation direction~~, the operation range of the temperature sensor is set to -0.3°C~+0.3°C when the current rotation range is in the second rotation direction.

11. (Previously Presented) The method of claim 2, wherein a refrigerant amount of the refrigerating cycle of the refrigerator is set as an amount of a refrigerator of the compressor when the compressor is rotated in the second rotation direction.

12. (Previously Presented) The method of claim 2, wherein a refrigerant amount of the refrigerating cycle of the refrigerator is calculated when a temperature of an evaporator of the refrigerator and a temperature of an entrance of the evaporator are identical while the compressor is being rotated in the second rotation direction, and the calculated refrigerant amount is set as a refrigerant amount of the compressor.

13-35 (Canceled)

36. (Previously Presented) The method of claim 2, wherein the first pre-set temperature and the second pre-set temperature are set by the user.

37. (Previously Presented) The method of claim 36, wherein the first pre-set temperature is 4 °C.

38. (Previously Presented) The method of claim 37, wherein the second pre-set temperature is 6 °C.